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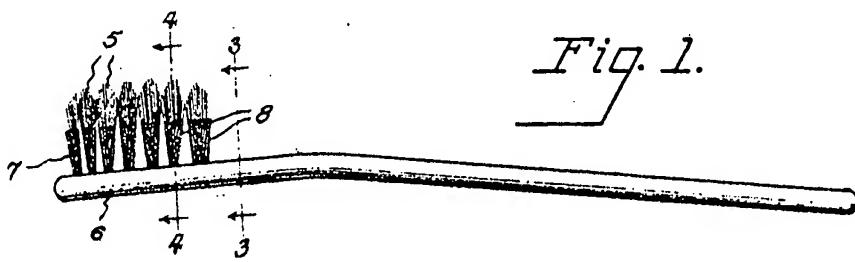


Fig. 1.

Fig. 2.

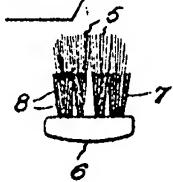


Fig. 3.

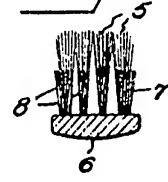


Fig. 4.

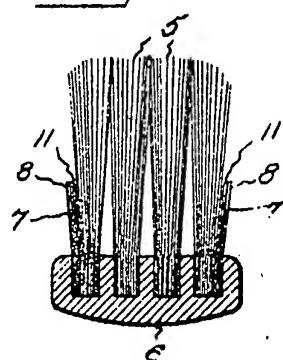


Fig. 5.

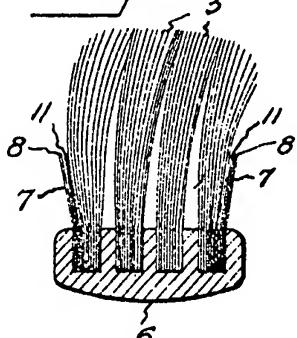


Fig. 6.

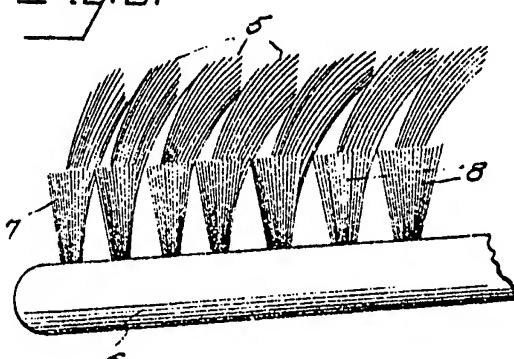
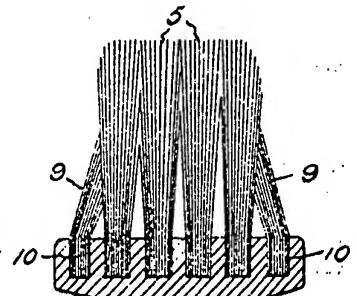


Fig. 7.



/ This Drawing is a reproduction of the Original on a reduced scale. /

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## PATENT SPECIFICATION

Div. 27

438,858



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Complete Specification Accepted : Nov. 25, 1935.

## COMPLETE SPECIFICATION

## Improvements in or relating to Tooth Brushes

We, JOHNSON & JOHNSON (Gt. BRITAIN) LIMITED, of Slough Buckinghamshire, a company organised under the laws of Great Britain, do hereby declare the 5 nature of this invention (which has been communicated to us by JOHNSON & JOHNSON, a corporation organised under the laws of New Jersey, New Brunswick, New Jersey, United States of America) 10 and in what manner the same is to be performed to be particularly described and ascertained in and by the following statement:—

This invention provides certain improvements in or in connection with 15 tooth brushes.

Its principal objects are to prolong the effective life of the bristles, to make them more efficient in service by supporting 20 them against breakage and excess flexing making for sagging, with the ultimate purpose of avoiding conditions tending to irritation of the gums and other areas and tissues of the mouth and of avoiding 25 other hazards or even more serious consequences.

In a tooth brush according to this invention, the cleaning bristles are surrounded by a hedge of shorter bristles, 30 so that each outside tuft of cleaning bristles along the sides and at the ends of the brush head is supported by a number of shorter bristles formed of material the same as or similar to the cleaning 35 bristles.

The nature, characteristic features and scope of the invention will be understood more readily from the following description taken in conjunction with the accompanying 40 drawings forming a part hereof, wherein figure 1 is an elevational view of the improved tooth brush, figure 2 is a front view of the brush head, figure 3 is a section on the line 3-3 of figure 1, figure 45 4 is an enlarged section on the line 4-4 of figure 1, figures 5 and 6 are enlarged sectional views showing how the hedge supports the cleaning bristles under severe strain, and figure 7 is a sectional 50 view of modification.

The brush embodies a series of tufts 5 of cleaning bristles anchored in a brush head 6 in a conventional or in any appropriate way. So also the manner of

trimming the ends of the bristles is purely 55 a matter of expediency or choice.

The essence of the invention is the supporting hedge, belt or wall 7. It comprises bristles 8 disposed in hedge fashion marginally of the cleaning bristles and 60 relatively short as contrasted therewith, that is to say, the effective length of the supporting bristles is about half the length of the longer cleaning bristles, which practice has determined to be sufficient to protect what may be termed the 65 critical range or area of inherent weakness against strain making for breaking or sagging. The supporting bristles 8, as a matter of economy or convenience, 70 may be tufted and anchored concurrently with the cleaning bristles, or the supporting bristles may be anchored independently of the cleaning bristles, for 75 example, after the manner shown in figure 7 wherein a hedge 9 of supporting bristles is independently mounted as at 10. In that example it will be observed that the supporting or bracing action of the hedge is augmented by inclining it 80 from the perpendicular in a direction towards and against the cleaning bristles.

The hedge of supporting bristles completely encompasses the cleaning bristles and preferably the tops of the supporting 85 bristles are finished, that is to say trimmed, in a common plane, for example as shown in figures 1 to 6. The effect and merit of this is that it makes for simplicity, symmetry, and also provides an 90 abrupt shoulder 11 (figures 4 and 5) against which the cleaning bristles are flexed in service.

The supporting bristles may be inherently stiffer than the cleaning bristles 95 but it will be understood that the relative shortness of the supporting bristles produces a relatively greater stiffness.

Having now particularly described and ascertained the nature of our said invention and in what manner the same is to be performed, we declare that what we claim is:—

1. A tooth brush wherein the cleaning bristles are surrounded by a hedge of 105 shorter bristles, so that each outside tuft of cleaning bristles along the sides and at the ends of the brush head is sup-

ported by a number of shorter bristles formed of material the same as or similar to the cleaning bristles.

2. A tooth brush as claimed in claim 1  
5 and wherein the shorter bristles are tufted with the cleaning bristles.

3. A tooth brush as claimed in claims 1 and 2 and wherein the shorter bristles are finished off flush in a common plane  
10 at about the mid height of the cleaning bristles.

4. A tooth brush as claimed in claim 1 and wherein the supporting bristles are tufted and located in the brush head

separately from the cleaning bristles and 15 are inclined in towards these bristles to support them.

5. Tooth brushes substantially as de-  
scribed and as shown in the accompany-  
ing drawings. 20

Dated the 24th day of May, 1935.

CARPMAELS & RANSFORD,  
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